

ROUTE 8 TICKET IRREGULARITIES PRE AND POST CHANGE IN BOARDING OPERATION

GLBPS



TECHNICAL NOTE

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1. INTRODUCTION

- 1.1.1 In 2013, the London bus network saw the introduction of the New Bus for London (NBL), inspired by the old Routemaster. These newer style buses have three sets of doors - at the front, middle and back - for people to board and alight the bus. Inside each set of doors is an Oyster Reader where passengers using Oyster cards to pay for their journey are required to 'touch-in' with their Oyster card. Those using non-Oyster tickets are required to board at the front of the bus and show their ticket to the driver.
- 1.1.2 Route 24 was the first route to be fully converted to the NBL, converting back in June 2013. Since then, over 30 routes have converted to the NBL.
- 1.1.3 Initially, a Customer Service Assistant (CSA) was present at the rear of the bus for most of the day. When the bus was operating with a CSA on board, the rear doors remained open and the CSA was responsible for ensuring the safety of passengers who 'hopped on/off' the bus using this door. When no CSA was on duty, the bus driver operated the rear door, opening it only at bus stops for passengers to board and alight. CSAs were completely removed from the NBL in 2016.
- 1.1.4 Because the design of the NBL allows passengers to board at the middle and rear of the bus without having their ticket inspected by the driver, there is a greater opportunity for passengers to fare evade. Fare evasion results calculated from the Greater London Bus Passenger Survey (GLBPS) support this suggestion. As such, TfL are considering a change in boarding operation for all NBL buses, whereby all passengers will be required to board at the front on the bus, validating their Oyster card at the front Oyster Reader or showing their ticket to the driver.
- 1.1.5 This note details the results from a trial on Route 8, which switched to front boarding only in August 2019.

2. METHODOLOGY

- 2.1.1 Due to funding restrictions, a standalone survey of Route 8 was not possible. Instead, data collected on route 8 as part of the GLBPS has been used to compare fare evasion before and after the change in operation. Data from the following GLBPS Survey Allocations has been used:
- Pre change in boarding operation
 - Allocation 114034 undertaken on Route 8 on 04/03/2019
 - Allocation 115036 undertaken on Route 8 on 12/06/2019
 - Post change in boarding operation
 - Allocation 116007 undertaken on Route 8 on 04/09/2019
 - Allocation 116003 undertaken on Route 8 on 09/09/2019
- 2.1.2 Due to the limited data currently available, results should be viewed with caution and considered indicative at best.

3. RESULTS

3.1 The Sample

- 3.1.1 Table 1 details the number of data cases collected across the four allocations being used for the route 8 trial, alongside the numbers excluded from analysis and the reasons why, and the final numbers included in analysis.
- 3.1.2 All data was collected between Monday-Thursday, between 06:00 and 22:00.
- 3.1.3 It should be noted that fare evasion analysis of GLBPS data is usually based on more than 50,000 cases.

Table 1. The Sample

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
TOTAL NO. DATA CASES	893	976
NO. EXCLUDED DUE TO ALIGHTERS / REFUSALS	14	18
NO. EXCLUDED DUE TO BUS OYSTER READER FAULTY	0	0
SAMPLE SIZE FOR ALL DAY PERIOD	879	958
NO. EXCLUDED DUE TO PRE 07:00 OR POST 19:00	221	163
SAMPLE SIZE FOR 07:00-19:00 PERIOD	658	795

3.2 Fare Evasion

07:00-19:00

- 3.2.1 The level of fare evasion/ticket irregularity recorded across the two allocations completed prior to the change in boarding operation was 2.1%, compared to 2.9% recorded across the two allocations completed post change. This was not a statistically significant difference.
- 3.2.2 The distribution of irregularities found is shown in Table 2. Results should be viewed with caution given the very small base sizes. However, results did show a decrease in the share of irregularities due to 'No Ticket' and 'PAYG non-validation'.



Table 2. Distribution of Irregularities (07:00-19:00)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
No Ticket	64.3%	30.4%
PAYG non-validation	21.4%	0.0%
ZIP 11-15 non-validation	7.1%	39.1%
Suspected 11-15	0.0%	13.0%
Child Impersonation	0.0%	0.0%
No photocard	0.0%	4.3%
Person-photo mismatch	0.0%	0.0%
Forged or defaced	0.0%	8.7%
Invalid date	0.0%	0.0%
Invalid time	0.0%	0.0%
Other	7.1%	4.3%
Base	14	23

All Day

- 3.2.3 For the 'All Day' period, the level of fare evasion/ticket irregularity recorded across the two allocations completed prior to the change in boarding operation was 3.3%, compared to 3.1% recorded across the two allocations completed post change. This was not a statistically significant difference.
- 3.2.4 The distribution of irregularities found is shown in Table 3. Results should be viewed with caution due to the small base sizes. However, again, results did show a decrease in the share of irregularities due to 'No Ticket' and 'PAYG non-validation'.

Table 3. Distribution of Irregularities (All Day)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
No Ticket	79.3%	26.7%
PAYG non-validation	10.3%	0.0%
ZIP 11-15 non-validation	3.4%	43.3%

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
Suspected 11-15	3.4%	13.3%
Child Impersonation	0.0%	0.0%
No photocard	0.0%	3.3%
Person-photo mismatch	0.0%	3.3%
Forged or defaced	0.0%	6.7%
Invalid date	0.0%	0.0%
Invalid time	0.0%	0.0%
Other	3.4%	3.3%
Base	29	30

3.3 Method of Payment

07:00-19:00

- 3.3.1 The methods of payment used across the pre and post change allocations were very similar, as shown in Table 4. Nearly half of passengers were travelling with Oyster PAYG or other single tickets.

Table 4. Method of Payment (07:00-19:00)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
PAYG/ Single Tickets	45.0%	47.8%
Bus Passes	8.4%	7.7%
Travel Cards	17.0%	15.6%
Free Travel	16.0%	16.6%
U16 Free	12.3%	11.1%
No Ticket	1.4%	1.3%
Base	658	795

- 3.3.2 The share of irregularity across the methods of payment did vary; in particular, PAYG/Single Tickets took a 21.4% share of the irregularities prior to the change in



boarding operation and 0% after the change. However, as before, base sizes are very small and results should be viewed with caution.

Table 5. Share of Irregularities (07:00-19:00)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
PAYG/ Single Tickets	21.4%	0.0%
Bus Passes	0.0%	0.0%
Travel Cards	0.0%	0.0%
Free Travel	7.1%	13.0%
U16 Free	7.1%	43.5%
No Ticket	64.3%	43.5%
Base	14	23

All Day

- 3.3.3 For the 'All Day' period, the methods of payment used across the pre and post change allocations were also very similar, as shown in Table 6. Again, nearly half of passengers were travelling with Oyster PAYG or other single tickets.

Table 6. Method of Payment (All Day)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
PAYG/ Single Tickets	45.7%	48.3%
Bus Passes	8.2%	8.5%
Travel Cards	19.7%	16.1%
Free Travel	14.2%	16.0%
U16 Free	9.4%	9.9%
No Ticket	2.7%	1.3%
Base	879	958

- 3.3.4 The share of irregularity across the methods of payment varied; in particular, 'No Ticket' took a 82.8% share of the irregularities prior to the change in boarding operation and 40.0% after the change. However, as before, base sizes are small and results should be viewed with caution.



Table 7. Share of Irregularities (All Day)

	PRE CHANGE IN BOARDING OPERATION (N)	POST CHANGE IN BOARDING OPERATION (N)
PAYG/ Single Tickets	10.3%	0.0%
Bus Passes	0.0%	0.0%
Travel Cards	0.0%	0.0%
Free Travel	3.4%	10.0%
U16 Free	3.4%	50.0%
No Ticket	82.8%	40.0%
Base	29	30

3.4 Summary

- 3.4.1 Results do appear to indicate a shift in the pattern of irregularity post change in boarding operation, with No Ticket and PAYG non-validation (irregularity types particularly associated with open boarding) becoming less prominent. However, as highlighted throughout this note, base sizes are small and results need to be viewed with caution.



APPROVAL

Version	Name		Position	Date	Modifications
1	Author	██████	Associate Director	24/09/2019	
	Checked by	████████ ████████	Senior Consultant Senior Consultant	25/09/2019	
	Approved by	██████	Associate Director	26/09/2019	

